

Technologies in Municipal Solid Waste Management in Indian Towns

Authors : Gargi Ghosh

Abstract : Municipal solid waste management (MSWM) is an obligatory function of the local self-government as per the Indian constitution, and this paper gives a glimpse of the system in Indian towns focusing on its present state and use of technology in the system. The paper analyses the MSWM characteristics in 35 towns in the southern state of Karnataka. The lifestyle in these towns was found to be very sustainable with minimal disposal and considerable reuse. Average per capita waste generated in the towns ranged from 300 gm/person to 500 gm/person. The waste collection efficiency varied from 60% to 80%. The waste shows equal share of organic and non-organic waste composition with a low calorific value. Lack of capacity of the municipal body in terms of manpower, assets & knowledge and social consciousness were found to be two major issues in the system. Technical solutions in use in India at present are composting, organic re-reprocessing, bio-methanation, waste to energy etc. The tonnage of waste generated ranged from 8 TPD to 80 TPD. The feasibility of technology has been analysed in the context of the above characteristics. It was found that low calorific value and mixed nature of waste made waste to energy and bio methanation processes unsuitable. Composting - windrow and closed door was found best to treat the bulk of the waste. Organic-re-processors was planned for phase 2 of MSWM program in the towns with effective implementation of segregation at source. GPS and RFID technology was recommended for monitoring the collection process and increasing accountability of the citizens for effective implementation.

Keywords : solid waste management, Indian towns, waste management technology, waste characteristics

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